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U-007-504.2

DISAPPROVAL OF THE OU 5 DRAFT RECORD OF DECISION

09/20/95

USEPA
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COMMENTS

DOE-FN



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

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SEP 20 1995

Mr. Jack R. Craig
United States Department of Energy
Feed Materials Production Center
P.O. Box 398705
Cincinnati, Ohio 45239-8705

HRE-8J

RE: Disapproval of the OU 5 Draft
Record of Decision

Dear Mr. Craig:

The United States Environmental Protection Agency (U.S. EPA) completed its review of the United States Department of Energy's (U.S. DOE) Operable Unit (OU) 5 Draft Record of Decision (ROD). The ROD addresses actions to mediate soil and groundwater contamination at the site.

Although the ROD conforms with U.S. EPA guidance it is not consistent with the Proposed Plan (PP) and the Remedial Investigation and Feasibility Study. Also insufficient technical justification exists for such inconsistencies. U.S. EPA has attached its comments on the ROD.

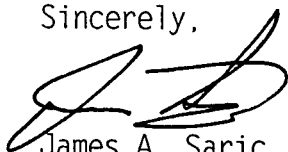
The most significant issue is U.S. DOE's deviation from the PP commitment of a 20 micrograms per liter (total uranium) maximum discharge limit for the blended effluent in the Great Miami River. This limit was agreed upon by all parties and presented to the public during the comment period. In subsequent meetings, U.S. EPA has learned of U.S. DOE's potential technical difficulties in meeting this discharge limit until the Advanced Wastewater Treatment System expansion system is completed and operational. As a result, U.S. EPA recommends U.S. DOE schedule a meeting to resolve this issue and discuss U.S. EPA's ROD comments.

Therefore, U.S. EPA disapproves the ROD pending incorporation of appropriate responses and revision of the ROD. U.S. DOE must submit a revised ROD with responses to comments within 30 days receipt of this letter.

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Please contact me at (312) 886-0992 if you have any questions regarding this matter.

Sincerely,



James A. Saric, Remedial Project Manager
Technical Enforcement Section #1
RCRA Enforcement Branch

Enclosure

cc: Tom Schneider, OEPA-SWDO
Jack Baublitz, U.S. DOE-HDQ
Don Ofte, FERMCO
Charles Little, FERMCO
Michael Yates, FERMCO
Terry Hagen, FERMCO

TECHNICAL REVIEW COMMENTS ON "DRAFT RECORD OF DECISION FOR
REMEDIAL ACTIONS AT OPERABLE UNIT 5, ENVIRONMENTAL MEDIA"
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT (FEMP)

The above-referenced draft record of decision (ROD), dated August 1995, was submitted to the U.S. Environmental Protection Agency (U.S. EPA) by the U.S. Department of Energy (DOE). The ROD was reviewed to (1) determine whether it is consistent with the proposed plan and remedial investigation and feasibility study (RI/FS) for Operable Unit 5 (OU5); (2) determine whether it was prepared in accordance with Superfund regulations, policy, and guidance; and (3) evaluate the technical and policy basis for any significant changes to the remedial action since issuance of the OU5 proposed plan.

The ROD is not consistent with the proposed plan and RI/FS, and insufficient technical justification exists for the inconsistencies. However, the ROD is consistent with U.S. EPA guidance on the whole. Three major issues in the ROD should be resolved before it is finalized and signed by U.S. EPA and DOE. The first issue relates to elimination of a discharge concentration limit for all the wastewater streams (treated and untreated water) discharged to the Great Miami River. It is necessary to establish a discharge concentration limit based on the mass discharge limit and expected rates of discharge from the treatment plant and other wastewater sources. The second issue relates to establishing remediation levels for perched water zone excavation instead of relying on the narrative standard of excavating zones of perched water that threatens to contaminate the Great Miami Aquifer. The third issue relates to designating a corrective action management unit (CAMU) at FEMP and the need to identify the types of RCRA hazardous waste that may be disposed of in the CAMU. In addition, stronger language prohibiting disposal of non-FEMP waste in the on-site disposal cell should be added to the ROD. General and specific review comments are presented below.

GENERAL COMMENTS

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 9 and 11 Page #: NA Line #: NA
Original General Comment #: I.

Comment: The draft OU5 ROD deviates significantly from the OU5 proposed plan. The ROD eliminates the 20 micrograms per liter ($\mu\text{g/L}$) of total uranium (U) maximum discharge limit for the blended effluent made up of treated and untreated groundwater and wastewater. The ROD retains (1) the maximum mass discharge limit of 600 pounds per year (lb/yr) of U and (2) the requirement that the in-stream U concentration in the Great Miami River must not exceed the 10^{-6} risk level of 530 $\mu\text{g/L}$ of U. The planned extraction rate for the groundwater remediation system is 4,000 gallons per minute (gpm). As discussed below, a maximum discharge concentration limit should be established.

Of the two requirements, the 600 lb/yr of U is predominant and makes the in-stream U requirement nearly meaningless. Based on a discharge rate of 4,000 gpm to the Great Miami River, the average U concentration of the effluent would need to be equal to or less than 34 $\mu\text{g/L}$ to meet the 600 lb/yr mass discharge limit. Regarding the second requirement for effluent discharge, effluent concentrations would need to be much greater than 530 $\mu\text{g/L}$ of U in order to exceed the allowable in-stream concentration because compliance with the in-stream requirement is monitored outside the mixing zone, allowing for effluent dilution by river water. The in-stream requirement appears to allow for discharge of relatively high concentrations of U. DOE proposes to monitor compliance with the 530- $\mu\text{g/L}$ in-stream limit based on the weekly average concentration.

The ROD does not specify how compliance with the mass discharge limit of 600 lb/yr of U will be determined. For U.S. EPA to ensure compliance with the mass discharge limit and ensure against undetected discharge of relatively high concentrations of U into the river, both the discharge flow volumes and the discharge U

concentrations should be measured on a regular basis. According to the ROD and U.S. EPA-approved design, the groundwater extraction and treatment system must restore the groundwater to beneficial use in a reasonable time. The system described in the ROD extracts groundwater at a rate of 4,000 gpm. Taken together, the mass discharge limit and the required restoration rate make it possible to calculate a discharge concentration limit. An average discharge concentration limit should be established that allows for fluctuations in discharge flow rates and U concentrations while ensuring against discharges of relatively high concentrations of U. The average discharge concentration limit should then become an enforceable performance standard in the ROD. The ROD should also be revised to state that the general restoration timeframe of 27 years or less (as modeled in the FS) in order to establish a performance standard for the groundwater extraction and treatment system. In addition, a monitoring program should be established that requires DOE to measure both flow rates and U concentrations with a 24-hour continuous composite sampler so that compliance with both the mass discharge limit and the discharge concentration limit can be analyzed daily.

The following information will be required for U.S. EPA, the Ohio Environmental Protection Agency (OEPA), and DOE to agree on a discharge concentration limit:

1. A description of all waters that are ultimately discharged to the river. This description should include the source, flow rate, concentration and location of measurement of the effluent. This description should also specify the current discharge sources and discuss how and when this will change in the future.
2. A description of the current and proposed treatment methods associated with all sources
3. A description of the treatment units (with cost estimates) potentially needed to meet the 20- $\mu\text{g/L}$ concentration limit

Commenting Organization: U.S. EPA
Section #: 9 Page #: NA
Original General Comment #: II.

Commentor: Saric
Line #: NA

Comment: The ROD should establish the process for reporting and instituting corrective measures for the groundwater extraction and treatment system and the advanced wastewater treatment plant in the event that the 600-lb/yr mass discharge limit, the discharge concentration limit (to be established), or the in-stream concentration limit is exceeded. The process should include installation and operation of additional treatment units unless exceedances can be attributed to exceptional operating conditions.

Commenting Organization: U.S. EPA
Section #: 9 Page #: NA
Original General Comment #: III.

Commentor: Saric
Line #: NA

Comment: DOE added language to Section 9 of the ROD in an attempt to clarify the fact that non-FEMP wastes will not be disposed of at FEMP. However, the language added to Section 9 is not satisfactory because it merely states that the ROD gives no approval for disposal of non-FEMP waste in the on-site disposal facility. U.S. EPA and OEPA need an explicit commitment from DOE that it will not allow non-FEMP waste to be disposed of at FEMP. The ROD should be revised accordingly.

Commenting Organization: U.S. EPA
Section #: 9 Page #: NA
Original General Comment #: IV.

Commentor: Saric
Line #: NA

Comment: The ROD proposes to excavate the perched water zones to the extent necessary to eliminate threats to the Great Miami Aquifer. However, the ROD does not establish remediation levels by which compliance with this objective can be measured. The proposed plan identifies two criteria for determining perched water excavation zones: (1) all perched water zones capable of yielding 1 gpm or more and (2) all perched water zones that could cause contamination of the Great Miami Aquifer. The 1-gpm yield criteria should be eliminated because the on-site land use is considered to be undeveloped park. However, the ROD should identify perched water remediation levels. In addition, the following items should be specified in the ROD: (1) the levels of radioactive contaminants, volatile organic compounds, and other

contaminants that will necessitate excavation; and (2) the methods to be used for verifying that cleanup levels have been achieved.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 9

Page #: NA

Line #: NA

Original General Comment #: V.

Comment: The ROD proposes to designate the whole FEMP site as a CAMU. At the same time, the ROD prohibits disposal of ignitable, reactive, and corrosive wastes in the on-site disposal facility. The ROD should explicitly identify the types of RCRA wastes that may be disposed of in the CAMU without meeting Land Disposal Restrictions (LDR) or minimum technology requirements. Presumably these wastes would be listed either hazardous wastes (which are readily identifiable) or characteristically toxic hazardous wastes. This information is necessary to evaluate the need for the CAMU and to identify all the waste types that may be disposed of in the on-site disposal facility.

SPECIFIC COMMENTS

[illegible]

Original Specific Comment #: I

Comment: The text states that wells pumping contaminated perched water will be retired from operation following issuance of the ROD. DOE should justify this action and explain why it will not be necessary to continue this removal action activity and integrate it with the final remedial action.

Commenting Organization: U.S. EPA. Commentor: Saric
Section #: 9.1.2 Page #: 9-6 Line #: 3 - 6

Original Specific Comment #: II

Comment: The text states that perched water from the sewage treatment plant area and the fire training area will be segregated and pretreated, if necessary, to address RCRA-listed constituents. It is unclear why this approach is being used only for these two areas. This approach should be used for all perched water at FEMP, especially in the production plant area where RCRA-listed organics are present at high levels in perched water. The ROD should be revised accordingly.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 9.1.2 Page #: 9-6 Line #: 13 - 15

Original Specific Comment #: III

Comment: The text states that limited pumping or trenching of perched water may be required to attain necessary remediation levels. However, no perched water remediation levels are presented in the ROD. The ROD should identify the remediation levels for perched water.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 9.1.5 Page #: 9-10 and 9-11 Line #: NA

Original Specific Comment #: IV

Comment: Section 9.1.5 discusses treatment of discharges to the Great Miami River. The following items should be added to Section 9.1.5: (1) the agreed-upon discharge concentration limit and (2) an explanation of the process of instituting reporting and corrective measures in the event that discharge limits both concentration- and mass-

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based are exceeded.

Commenting Organization: U.S. EPA
Section #: 9.1.8 Page #: 9-15
Original Specific Comment #: V

Commentor: Saric
Line #: NA

Comment: Section 9.1.8 describes the designation of the FEMP site as a CAMU. The text states that ignitable, reactive, and corrosive characteristic hazardous wastes will not be disposed of in the CAMU. The text should specify the types of listed and toxic characteristic hazardous wastes that may be disposed of in the CAMU.

Commenting Organization: U.S. EPA
Section #: 9.2 Page #: 9-28
Original Specific Comment #: VI.

Commentor: Saric
Line #: 26 - 33

Comment: Section 9.2 discusses remedial action objectives and cleanup levels. The waste acceptance criteria for "RCRA organics" (assumed to be toxic characteristic RCRA hazardous organic waste) are not well defined. No numerical waste acceptance criteria exist for most of the RCRA-based contaminants in the waste acceptance criteria table (Table 9-6) in the ROD. The ROD proposes using hand-held instruments to identify the presence of RCRA organics and proposes either (1) treating soil to meet site waste acceptance criteria and disposing of soil contaminated with RCRA organics on site or (2) treating the soil to meet LDR levels and disposing of the soil off site. The ROD should explain more fully the program for identifying and quantifying RCRA organics. The following items should be addressed: (1) the types of instruments that will be used to identify RCRA organics, (2) the levels of distinction among individual chemicals and the quantification levels that each instrument is capable of achieving, and (3) the levels of RCRA organics that will trigger on-site treatment and disposal or off-site treatment and disposal of contaminated soil.

Commenting Organization: U.S. EPA
Section #: 10.1.2 Page #: 10-3
Original Specific Comment #: VII.

Commentor: Saric
Line #: 19 - 24

Comment: The text states that perched groundwater zones with contaminant concentrations above levels protective of the underlying Great Miami Aquifer will be excavated

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 10.1.4 Page #: 10-5 Line #: 1 and 2
Original Specific Comment #: VIII.

Comment: These lines discuss the performance standards for the advanced wastewater treatment plant after any blending of discharge. A typographical error needs to be corrected by changing the phrase "will be exceeded" to "will not be exceeded." In addition, the text should be revised to specify the discharge concentration limit to be met.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 10.4 Page #: 10-12 Line #: 11 - 15
Original Specific Comment #: IX.

Comment: This paragraph states that soil contaminated with RCRA-regulated contaminants will be treated to meet LDR requirements for off-site disposal or waste acceptance criteria for on-site disposal, thus providing significant reductions in the toxicity, mobility, or volume of contaminants. The significance of these reductions appears to be overstated considering (1) the relatively small volume of soil contaminated with RCRA-regulated contaminants and (2) the fact that no numerical waste acceptance criteria exist for most of the RCRA-based contaminants in the waste acceptance criteria table (Table 9-6) of the ROD. The text should be revised to quantify the significance of the reductions or to remove the claim from the ROD.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 11 Page #: 11-1 - 11-3 Line #: NA
Original Specific Comment #: X.

Comment: This section provides the rationale for two significant changes made to the proposed remedy since issuance of the proposed plan. The first change relates to deletion of a discharge concentration limit. Although DOE presents a technically sound rationale for not using 20 µg/L as the discharge concentration limit, it does not present any arguments for eliminating the requirement for a

discharge concentration limit. This section should be revised to present a new discharge concentration limit (see General Comment I) that accommodates (1) the mass discharge limit, (2) the groundwater restoration timeframe and the resulting discharge rate from the advanced wastewater treatment system, and (3) the surface water remediation levels.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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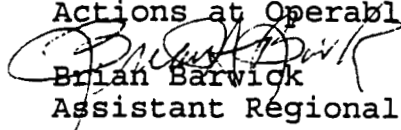
September 19, 1995

REPLY TO THE ATTENTION OF:

CM-29A

MEMORANDUM

SUBJECT: Draft Record of Decision for Remedial
Actions at Operable Unit Five

FROM: 
Brian Barwick
Assistant Regional Counsel

TO: Jim Saric
Remedial Project Manager

These are my comments on the United States Department of Energy's (U.S. DOE) Draft Record of Decision for Remedial Actions at Operable Unit Five of the Fernald Environmental Management Project:

Page 7-2, lines 27-33. Will the retirement of wells be timed to coincide with excavation of the perched water zones? Or will all the wells be retired immediately after issuance of the ROD? If the latter, will there be a significant period of time wherein contaminated groundwater will migrate from the perched water zones? U.S. DOE needs to better explain how this transition from removal to remedial response activities will be orderly as is required by 40 CFR § 300.415(f).

Page 7-7, lines 33 and 34 and Page 7-10, lines 1 and 2. These lines are identical and appear to be a typographical error.

Page 7-10, lines 38 and 39. This sentence would be more accurate as follows:

"Remedial actions pursuant to Sections 104 or 106 of CERCLA must meet the cleanup standards of Section 121 of CERCLA, including attainment of (or justification of a waiver from) ARARs."

State and Federal requirements expressed as ARARs may, absent application of CERCLA, apply directly to remedial activities.

Page 7-13, lines 20 and 21. Use of the term "treatment," which is an environmental term of art, is confusing in this context. The PCB Spill Cleanup Policy set forth in 40 CFR Part 761, Subpart G specifies cleanup levels and requires disposal of PCB

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contaminated materials pursuant to 40 CFR Part 761, Subpart D (see 40 CFR § 761.125(a)(2)) but does not set forth treatment standards. "Management" may be a better term.

Page 8-2, lines 13 and 14. This seems to suggest that there may be some consolidation and capping in place of contaminated materials and a separate on-site disposal unit. Is this the intent?

Page 8-11, lines 5-8. As indicated in other U.S. EPA comments, this approach is not acceptable.

Page 9-15, lines 27-31. Why are the clean-up costs based upon a projected soil cleanup period of 22 years instead of the accelerated 10 year schedule recently endorsed by U.S. DOE Headquarters?

Page 10-5, line 2. At a minimum, the second "be" is a typographical error. More substantively, this should read "will not be exceeded."

Page 10-5, line 32. Pursuant to 40 CFR § 300.430(f)(4)(iii)(A), U.S. DOE and U.S. EPA are making a joint remedy selection. Therefore, "grants" should be "concur with." Other, similar, statements throughout the ROD should also be clarified (e.g., see page 10-7, lines 4-12 and page 10-11, line 22).

Pages 10-7 through 10-10 (Section 10.2.2.) There is language in the OU 2 ROD which discusses the waiver issue in a manner satisfactory to the regulatory agencies and which has passed through public comment. Why then has DOE attempted to re-write this section? DOE should replace this section with the OU 2 waiver discussion. In addition, it should be made clear that this ROD in no way re-opens the waivers for on-site disposal of OUs 2, 3, and 4 waste but instead concerns only OU 5 waste.

Pages R1-R3. Are all of these documents in the administrative record?

A.3-138, Yocum, E. 6. The 20 parts per billion final remediation level for the Great Miami Aquifer is not a goal but an enforceable element of this ROD.